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and continue the washing as before. It is better to wash ten times than only two or three times, as each shaking loosens a kind of flocculent matter which comes away in the washings. Another sanding in a smaller convex glass with distilled water will improve the material, and if persisted in will give you entirely pure diatoms free from foreign matter or sand. Care should be used not to overlook and throw away the large forms of diatoms which often adhere obstinately to the glass. Frequent examination of samples will direct the steps of the process and show when a perfect result is obtained. The material in jars 2 and 3 can be put through the same process and will yield smaller forms. The sand and large diatoms which cannot be separated from it by the above process may also be saved and the diatoms picked out separately under a lens or by means of a mechanical finger. Only unlimited patience will ensure the best results.

LIST OF MOBILE BAY DIATOMS.

By J. D. Cox, LL. D., Cincinnati, O.

Actinocyclus Ehrenbergii, Ralfs.	Amphiprora costata.
“ fuscus, Norman (<i>dubius</i> Grunow).	“ alata, Kutz'g.
Actinoptychus undulatus, Ehr.	“ lepidoptera, Greg.
“ areolatus, Ehr.	Asteromphalus Brookii, Bailey.
“ splendens, Ralfs.	Auliscus sculptus, Ralfs.
“ trifolius, McNeill, N. Sp.*	“ cælatus, Bailey.
Amphora proteus, Gregory.	“ pruinosis, Bailey.
“ Clevei, Grunow.	Auliscus radiatus, Bailey.
“ cingulata, Cleve.	“ punctatus, Bailey.
“ obtusa, Greg. and H. L. Sm.	Amphitetras antediluviana, Ehr.
Amphiprora elegans, W. Sm.	Bacteriastrum curvatum, Shadbolt.
“ vitrea, W. Sm.	Biddulphia rhombus, W. Sm.
	“ Baileyi, W. Sm.

* This new species described by Mr. W. S. McNeill of Mobile, I have found in the Richmond and Petersburg fossil deposits, and have been informed by Mr. C. L. Peticolas, of Richmond, that he has found and noted it in the same earth. Mr. McNeill describes and figures it as follows: Disc considerably convex, with three depressions, broadly heart-shaped, shallow, like a broad trefoil; opposite each of the narrower ridges separating the trefoil leaves is a spine within the rim of the disc. Aerolation sub-hexagonal or irregularly reticulate with finer system of regular punctæ, similar to that of the more finely marked *Actinoptychus areolatus*, Ehr. Hoop hyaline—the trefoil leaves not bounded by sharp depression, but passing into the intervening ridges by very gradual curve.

- Biddulphia aurita*, Bréb.
 " *lævis*, W. Sm.
Cerataulus turgidus, Ehr.
 " *Smithii*, Bréb.
Campylodiscus clypeus, Ehr.
 " *echineis*, Ehr.
 " *limbatus*, Bréb.
 " *Samoensis*, Grun.
 " *ecclesianus*, Grev.
Chætoceros distans, Cleve.
Coconema lanceolatum, Ehr.
Coscinodiscus nitidus, Gregory.
 " *radiatus*, Ehr.
 " *subtilis*, Ehr.
 " *lineatus*, Ehr.
 " *excentricus*, Ehr.
Cymatopleura elliptica, Bréb.
Cymbella heteropleura, Ehr.
Epithemia zebra, Kutz'g.
Eunotia Arcus, Ehr.
 " *parallela*, Ehr.
 " *diodon*, Ehr.
 " *triodon*, Ehr.
Eupodiscus Argus, Ehr.
 " *radiatus*, Bailey.
Grammatophora marina, W. Sm.
Navicula lyra (type) Ehr.
 " *lyra*, var. *recta*.
 " " var. *elliptica*.
 " " var. *dilatata*.
 " *irrorata*, Greville.
 " *permagna*, Bailey.
 " *maculata*, Edwards.
 " *Caribbea*, Cleve.
 " *didyma*, Kutz'g.
 " *marginata*, Lewis.
 " *Hennedyi*, W. Sm.
 " *prætecta*, Ehr.
 " *Lewisiana*, Grev.
 " *serratula*, Grunow.
Navicula ovalis, Ehr.
 " *humerosa*, Ehr.
 " *humerosa*, Bréb.
 " *maculata*, W. Sm.
 " ?(Schmidt's atlas, pl. 45, fig. 13), N. Sp.
Nitzschia circumsuta, Bailey.
 " *scalaris*, Ehr.
 " *sigmoidea*, W. Sm.
 " *sigma*, W. Sm., var. *elongata*, Grunow.
Orthosira marina, W. Sm.
Pinularia distans, W. Sm.
 " *longa*, Gregory.
 " *major*, Rabh.
 " *nobilis*, Ehr.
Plagiogramma Gregorianum, Grev.
 " *validum*, Grev.
Pleurosigma formosum, W. Sm.
 " *decorum*, W. Sm.
 " *angulatum*, W. Sm.
 " *æstuarii*, W. Sm.
 " *acuminatum*, W. Sm.
 " *balticum*, W. Sm.
Raphoneis amphiceros, Kutz'g.
Rhabdonema arcuatum, Kutz'g.
Stauroneis Phœnicenteron, Ehr.
 " *pulchella*, W. Sm.
Surirella Febigerii, Lewis.
 " *fastuosa*, Ehr.
 " *Davidsonii*, A Schmidt.
 " *splendida*, Kutz'g.
Systephania diadema, Ehr.
Terpsinoe musica, Ehr.
 " *Americana*, Bailey.
Triblyonella punctata, W. Sm.
Triceratium favus, Ehr.
 " *alternans*, Ehr.
 " *sculptum*, Shadbolt.

The foregoing list of species is not furnished as a complete list of forms to be found in the material, but merely those forms thus far identified by the author.